Ethics in engineering practice: an Asian perspective

BY TECK-SENG LOW, Region 10
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It has been said that Asia will be the focus of the next phase in global growth, development and industrialization. These factors will be driven by external investments and consumer demand in a market that has the potential to be the biggest in the world with expanding technology applications.

Several countries' successes have been studied and critiqued. These include Taiwan, Singapore, Hong Kong and Korea. Each of these countries has followed different paths in their development but a common factor in all the efforts in the rush and haste of development is the involvement of the government and foreign multinationals (MNCs).

The rest of the regions have caught the wind and embarked on aggressive economic development programs. China and India are transitioning to modern market economies. Despite the recent economic crisis in this part of the world, the rush of activities has not been dampened and its recovery has shown the resilience of these economies.

MNCs bring significant external investments as well as modern and often leading-edge technologies. They gravitate to locales with structured, investment-friendly, highly competitive economies; a quality workforce; and sound infrastructure support for financial services, logistics and technology.

Active intervention by the government using the high savings rate characteristic of these countries' societies to fuel their economic expansion develops a second wing in these economies. In some of them, local MNCs have grown to compete in the global arena.

The prospect of an explosion in consumerism in the most populated continent also offers exciting opportunities that draw investors. The potential of Asia brings multinational and multicultural corporations, professionals and governments together to explore and exploit the resources and markets that promise tremendous monetary returns.

The drive by nations to be developed, and the pace and haste at which development and industrialization are conducted, bring many issues to the forefront. The building of an infrastructure to provide energy, water, transportation and industrial land raises environmental and socio-economic issues. The impact on the quality of the environment, ecology, traditional industries and agriculture are considerations that are often sacrificed.

In industry, standards in labor management and technology application are sometimes stretched. Professionals working in this dynamic environment face exciting prospects tinged with issues that may test their integrity and ethical conduct.

Engineers — key professionals in the development of economic and industrial infrastructure and industrialization — face the dilemma of meeting their corporate responsibility and ensuring profitability when bidding for contracts where the local culture practices do not match the ethical standards of institutions such as the IEEE. Situations that compromise standards for expediency in engineering practice and the imposition of political agendas by governments over accepted international expectations also pose ethical dilemmas for both local and foreign engineers.

These issues are clearly complex. It is important that the priorities in the national agenda for development, the impact on corporations and the role of the professional — in our case the engineer — are clearly understood and defined. However, ethical conduct is often of concern. This stems from the lack of emphasis in professional practice, the opportunism of corporations, and the training and education of an engineer. Hence, opportunities for conflict. This becomes more critical with the expansion in development programs and high technology applications such as the management of toxic wastes from battery plants and semiconductor wafer fabrication facilities.

Education and the promotion of the ethical application of technology are steps that must be made as countries move forward. Asia's curriculum structure places emphasis on an engineer's training. This trend has been dictated by the needs of growing economies. Often neglected aspects are the social implications of technology and ethical responsibilities of an engineer. This must change.